June 23, 1964 S. D. HULSH 3,137,885

BRUSH HEAD FOR DISPENSING AND APPLYING FOAM DETERGENT

Filed March 14, 1963

Fig. 1

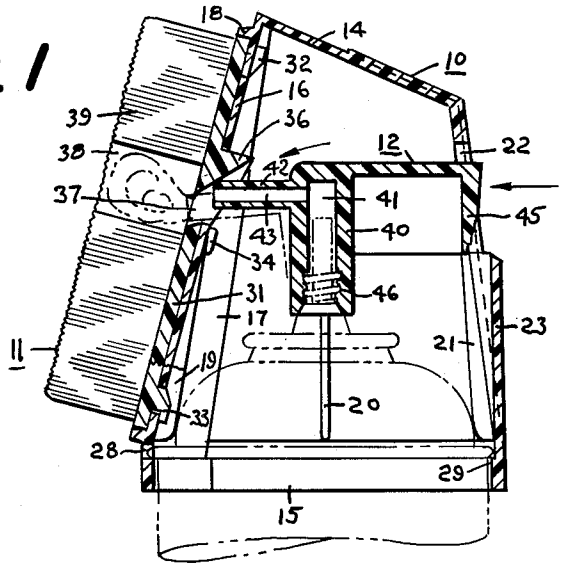


Fig. 4

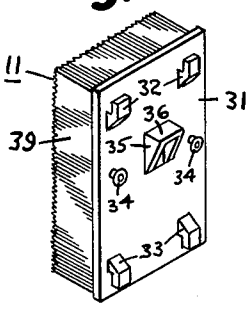


Fig. 2

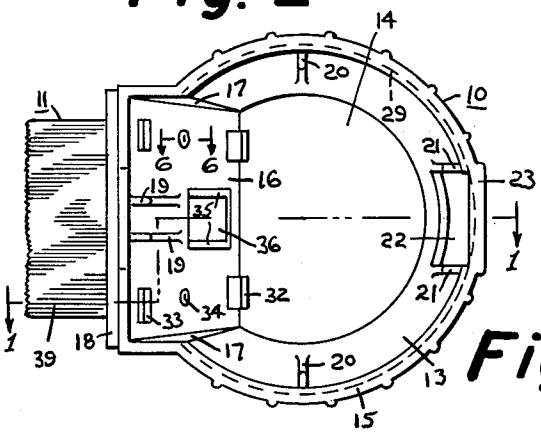


Fig. 3

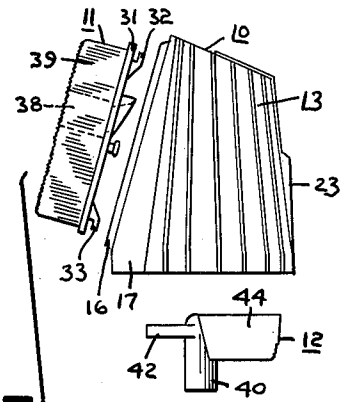


Fig. 6

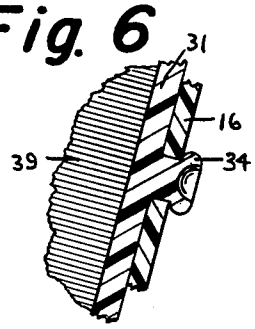
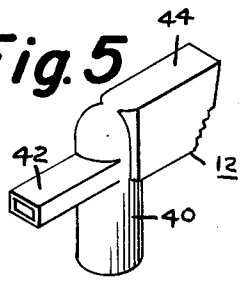
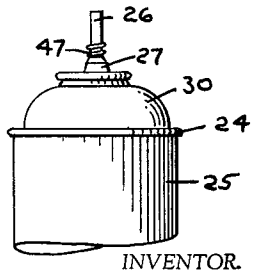


Fig. 5





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BRUSH HEAD FOR DISPENSING AND APPLYING FOAM DETERGENT

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9 Claims. (Cl. 15—552)

This invention relates generally to foam applying brush heads, and more particularly relates to a brush carrying device detachably securable to the working end of an aerosol type dispensing container in such a manner that foamed detergent producible from the container is passed outward into the brush for application and working by the latter as a cleaner for upholstery and the like.

It is a primary object of this invention to provide a novel brush head dispensing and applying cap unit which is detachably securable to the valve end of an aerosol package of a foamable detergent.

Another object of this invention is to provide a novel brush head dispensing and applying cap unit as aforesaid in which the brush head is detachable from the remainder of the cap structure for separate cleaning and replacement as may be desired.

A further object of this invention is to provide a novel brush head dispensing and applying cap unit detachably securable to an aerosol package of foamable detergent which may be readily detached from the aerosol package when the latter is exhausted and quickly secured to a full replacement aerosol package for continued use.

Yet another object of this invention is to provide a novel brush head dispensing and applying cap unit for an aerosol package of foamable detergent which is so securable to the aerosol container that the latter is converted into a manipulating handle for the brush head.

The foregoing and other objects of the invention will become clear from a reading of the following specification in conjunction with an examination of the appended drawings, wherein:

FIGURE 1 illustrates a vertical cross sectional view through the brush head dispensing cap unit according to the invention showing the various component parts in operative assembled relationship as they would be when secured upon the valve end of an aerosol dispensing package, as shown in phantom outline, the vertical section of FIGURE 1 being taken as illustrated along the line 1—1 of FIGURE 2.

FIGURE 2 is a bottom plan view of the brush head dispensing cap unit shown in FIGURE 1 with the dispenser button discharge tube omitted for purposes of clarity;

FIGURE 3 illustrates a reduced scale side elevational exploded view of the brush head dispensing cap unit with the valve end of a foamed detergent aerosol container in underlying position to the dispenser button discharge tube;

FIGURE 4 illustrates in rear perspective the detachable brush head unit of the cap structure;

FIGURE 5 is a perspective view of the dispenser button discharge tube shown in section in FIGURE 1; and

FIGURE 6 is an enlarged fragmentary section through a portion of the brush structure and dispensing cap front wall illustrating the positive snap lock therebetween as would be seen when viewed along the line 6—6 of FIGURE 2.

In the several figures, like elements are denoted by like reference characters.

Considering first FIGURES 1, 2 and 3, it is observed that the brush head dispensing cap according to the invention includes three basic parts, a cap shell 10, detachable brush 11 and a combination dispenser button discharge tube 12. The cap shell 10 may be best described as having a frusto-conical portion 13 closed at the top by a skewed wall 14 and having an open bottom terminated in a skirt 15, the top wall 14 slanting upward from the rear to the front of the cap shell 10. The front portion of the frusto-conical portion 13 is wedged outward to form a flat generally rectangular front wall 16 which slopes rearward as it extends upward from the top of the bottom skirt 15 to a junction with the top wall 14, the sides of the front wall 16 being joined to the forward terminations of the frusto-conical portion 13 by generally triangularly shaped side walls 17. Extending forward about the periphery of the rectangular front wall 16 is a bead 18, and the front wall is apertured to appropriately receive formations projecting rearwardly from the brush 11 backing member, as will be described.

Extending upward for a distance from the lower edge of the front wall 16 are a pair of front reinforcing and camming ribs 19 somewhat laterally of and disposed symmetrically with respect to the vertical center line of the rectangular front wall 16. Similarly, a pair of side reinforcing camming ribs 20 and rear reinforcing and camming ribs 21 extend inward and upward from the inside surface of the frusto-conical portion 13 of the cap shell 10, the rear ribs 21 being substantially parallel to and disposed respectively somewhat laterally outward of the front ribs 19. The rear wall of the frusto-conical portion 13 is rectangularly apertured as at 22, the aperture 22 extending for a distance upward from approximately the vertical mid point of the shell 10 and being of a width equal to the lateral spacing between the rear reinforcing camming ribs 21. The lower portion 23 of the rear wall region of frusto-conical portion 13 which lies between the rear ribs 21 is also wedged rearwardly into a substantially vertical position so that the cap shell 10 may be moved vertically downward for locking engagement with the top bead 24 of the aerosol can 25 without physical interference with the dispenser button discharge tube 12 which is detachably fixed upon the discharge tip 26 of the aerosol can valve 27.

The cap shell 10 is flexible upon the aerosol can 25 by moving the shell vertically downward so that the can bead 24 is first projected into the slot 28 cut through the front of the bottom skirt 15 immediately below the front wall bead 18 and then moving the rear end downward until the inwardly offset shoulder 29 which extends about the upper edge of the bottom skirt 15 forwardly from the rear thereof is snapped under the can top bead 24. A certain degree of resistance to this downward movement of the shell 10 is provided by the reinforcing and camming ribs 19, 20 and 21 which bear against the rounded upper portion of the can 25 in such manner as to tend to upwardly shift the shell 10. Thus, when the shoulder 29 has snapped under the bead 24 the upward camming action of the ribs firmly locks the cap in position upon the can.

The detachable brush 11, shown separately in FIGURE 4, includes a back member 31 from the upper end of which extends a pair of rearwardly and upwardly turned hooks 32 and from the lower end of which extend a similarly shaped and positioned pair of downwardly turned hooks 33. Positioned substantially in line with and between the upper and lower hooks 32 and 33 are a pair of snap buttons 34, and disposed laterally substantially mid way between the snap buttons 34 is a formation having a pair of triangular side walls 35 and a bridging top wall 36 extending rearwardly from the back member 31 to form an inverted chute terminating at its forward end in a rectangular opening 37 through the back member 31. Secured to and covering the front face of the back member 31 except in the region 38 in front of the rectangular opening 37 are a plurality of bristles 39 which form the brushing unit, the bristle free

region 38 being provided to allow passage through and into the brush of the foamed detergent to be dispensed from the aerosol can 25.

As indicated by the sectioning, the back member 31 is made of plastic and is of a type having some resilience thereto so that the back may be flexed to first engage the hooks 32 through the corresponding slot openings cut through the front wall 16 and to then project the lower hooks 33 into their corresponding front wall openings. The chute formation then moves rearward through a cutout therefor and the brush may be pressed firmly against the front wall in the region of the snap buttons 34 to cause the latter to pop through properly positioned receiving holes, this latter detail being shown in FIGURE 6.

The dispenser button discharge tube 12 is best seen in the showing of FIGURES 1 and 5 and is observed to include a vertical cylindrical part 40 having a bore 41 extending upwardly from the bottom to a dead ended top, a horizontal spout 42 having a passage 43 extending rearwardly from the spout tip and opening into the upper end of the bore 41, and a horizontally rearwardly extending operator 41 terminating in a rear wall 45 adapted to be finger engaged for dispensing of the foamed detergent. As best seen in FIGURE 1, the lower end of the bore 41 is helically grooved as at 46 to grasp the spring 47 secured to and disposed about the base of the aerosol valve discharge tip 26.

The unit is assembled to the aerosol can 25 by first pressing the dispenser button discharge tube 12 downward onto the aerosol can valve discharge tip 26, as best seen in FIGURE 1. The cap shell 10 with brush 11 assembled thereto is now moved vertically downward over the dispenser button discharge tube 12 so that the end of the horizontal spout 42 is disposed with its side walls between the triangular side walls 35 of the brush unit and with the rear end of the horizontal operator 44 disposed within the rectangular aperture 22 at the rear of the frusto-conical portion 13.

Lateral pressure exerted upon the rear wall 45 of the dispenser button 12 causes the cylindrical part 40 and spout 42 to move to the left in pivotal fashion about the aerosol can valve 27 to thereby open the valve 27 in the usual manner and cause the foamed detergent to pass upward into the bore 41 and then outward into the bristle free region 38 of the brush 11 through the spout 42 which now occupies the position shown in broken line. As will be observed, the cross sectional area of the tip of the horizontal spout 42 is of substantially the same size as the rectangular opening 37 of the inverted chute extending rearward from the brush back member 31, so that the foamed detergent being ejected from the spout 42 cannot back up and fill the inside of the cap shell 10. The ejected foamed detergent is of course then workable on and into the article to be cleaned by means of the brush bristles 39.

Having now described my invention in connection with a particularly illustrated embodiment thereof, it will be appreciated that variations and modifications of the same may now occur from time to time to those persons normally skilled in the art without departing from the essential scope or spirit of my invention, and accordingly it is intended to claim the same broadly as well as specifically as indicated by the appended claims.

I claim:

1. A brush head dispensing and applying cap unit detachably securable to the valve end of an aerosol package of foamable detergent, comprising in combination, a hollow cap shell having a top wall and side walls and apertured front and rear wall portions, said side walls and front and rear wall portions extending downward from the said top wall to define an open bottom, said cap shell carrying means located proximate to the open bottom thereof for detachably securing the shell to the valve end of the aerosol package, said apertured front wall having extending laterally therefrom a plurality of bristles forming a brush having a bristle-free region at the location of the front wall aperture; and a dispenser button discharge tube having a vertically extending hollow part detachably securable upon the aerosol package valve discharge tip and enclosing the discharge opening thereof, an open ended discharge spout extending laterally from said hollow part to said front wall aperture and having a passage therethrough connecting the discharge spout open end to the discharge opening of the aerosol package valve discharge tip when said hollow part is secured upon the valve discharge tip, and a finger workable operator coupled to and extending laterally from said hollow part in the opposite direction from that of said discharge spout to a terminating end positioned proximate to the rear wall aperture of said shell, whereby, when the terminating end of said operator is pushed laterally, said aerosol package valve is opened and foamed detergent flows therefrom through said hollow part to said discharge spout and into the bristle free region of said brush through said apertured front wall.

2. The foam dispensing and applying unit as set forth in claim 1 wherein said means located proximate to the open bottom of said cap shell for detachably securing the cap shell to the valve end of the aerosol package includes, a radially inwardly offset shoulder extending forward about the inside of said shell from the rear thereof at a distance somewhat above the open bottom of said shell and adapted to snap inward under a bead on the aerosol package when the shell is moved downward over the upper end of the aerosol package, and a plurality of camming elements extending radially inward from the inside of said shell and positioned somewhat above the aforesaid inwardly offset shoulder which resist the downward movement of said shell over the upper end of the aerosol package by physically engaging the latter, whereby, when said shoulder snaps inward under the bead as aforesaid the camming elements bias the shell upward to strongly engage the shoulder with the bead and prevent relative rotation between the shell and the aerosol package.

3. The foam dispensing and applying unit as set forth in claim 1 wherein the said plurality of bristles forming said brush are secured to a backing member having an aperture therethrough which defines the said bristle free region, said backing member being detachably secured to said shell side wall with the aperture of said backing member aligned with the aforesaid shell side wall aperture.

4. The foam dispensing and applying unit as set forth in claim 1 wherein the haid plurality of bristles forming said brush are secured to a backing member having an aperture therethrough which defines the said bristle free region, a guide structure extending rearwardly from the backing member at the top and side edges of the aperture therethrough, said backing member being detachably secured to said shell side wall with the aperture of said backing member aligned with the shell side wall aperture and with said guide structure projecting rearward through and beyond the aforesaid shell side wall aperture and being disposed in overlying and opposite side lateral relation to the end of the said discharge spout of the aforesaid foam discharging device.

5. The foam dispensing and applying unit as set forth in claim 1 wherein the said plurality of bristles forming said brush are secured to a backing member having an aperture therethrough which defines the said bristle free region, a guide structure extending rearwardly from the backing member at the top and side edges of the aperture therethrough, said backing member being detachably secured to said shell side wall with the aperture of said backing member aligned with the shell side wall aperture and with said guide structure projecting rearward through and beyond the aforesaid shell side wall aperture and being disposed in overlying and opposite side lateral relation to the end of the said discharge spout of the afore-

said foam discharging device, the cross-sectional size and shape of the end of said discharge spout being such that it just fills the aperture through said backing member when said operating means is worked.

6. The foam dispensing and applying unit as set forth in claim 1 further including a guide structure extending inwardly from the inside of said cap shell sidewall at the top and side edges of the aperture therethrough and being disposed in overlying and opposite side lateral relation to the end of the said discharge spout of the aforesaid foam discharging device to guide the discharge spout end into the cap shell side wall aperture when the said operating means is operated to open the aerosol package valve.

7. The foam dispensing and applying unit as set forth in claim 1 wherein the discharge spout end proximate to the cap shell sidewall aperture is positioned somewhat upward and inward from the aperture center toward the cap shell top wall, and wherein said cap shell further includes a guide structure extending inwardly and upwardly from the inside of said cap shell side wall at the top and side edges of the aperture therethrough and being disposed in overlying and opposite side lateral relation to the end of the said discharge spout of the aforesaid foam discharging device to guide the discharge spout end downward and outward into the cap shell side wall aperture when the said operating means is operated to open the aerosol package valve.

8. The foam dispensing and applying unit as set forth in claim 1 wherein the discharge spout end proximate to the cap shell side wall aperture is positioned somewhat upward and inward from the aperture center toward the

cap shell top wall, and wherein said cap shell further includes a guide structure extending inwardly and upwardly from the inside of said cap shell side wall at the top and side edges of the aperture therethrough and being disposed in overlying and opposite side lateral relation to the end of the said discharge spout of the aforesaid foam discharging device to guide the discharge spout end downward and outward into the cap shell side wall aperture when the said operating means is operated to open the aerosol package valve, the cross-sectional size and shape of the end of said discharge spout being such that it just fills the cap shell side wall aperture.

9. The foam dispensing and applying unit as set forth in claim 1 wherein the discharge spout is formed of flexible material and its end proximate to the cap shell sidewall aperture is positioned somewhat upward and inward from the aperture center toward the cap shell top wall, and wherein said cap shell further includes a guide structure extending inwardly and upwardly from the inside of said cap shell side wall at the periphery of the aperture therethrough including an upper guide disposed in overlying relation to the end of said discharge spout and lateral guides disposed on opposite sides of the said discharge spout, said guides being effective to cause the discharge spout end to move downward and outward into the cap shell side wall aperture when the said operating means is operated to open the aerosol package valve.

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